

REMARKS

Claims 1-8 are pending in this application. Claims 1-8 stand rejected. By this Amendment, claims 1, 2, 4, 5, 7, and 8 have been amended. The amendments made to the claims do not alter the scope of these claims, nor have these amendments been made to define over the prior art. Rather, the amendments to the claims have been made to clarify them and improve the form thereof. In light of the amendments and remarks set forth below, Applicant respectfully submits that each of the pending claims is in immediate condition for allowance.

Claims 2, 4, and 7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Miya in view of Yamada and further in view of Chalmers. Further, claims 1, 5, and 6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Vasic in view of Chalmers. Additionally, claims 2-4 and 7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Vasic in view of Yamada and further in view of Chalmers. Finally, claim 7 stands rejected under 35 U.S.C. § 103 as being unpatentable over Higashi in view of Yamada and further in view of Chalmers. Applicant respectfully requests reconsideration and withdrawal of this rejection.

Each of Applicant's claims include a limitation that the oversampling point coincides with a maximum eye pattern between the pilot symbols. This feature is not present in the cited references. In Chalmers, a sampling operation is carried out at a point where an eye pattern of respective data symbols becomes a maximum. However, because the respective data symbol has an uncertain value such as positive and negative codes at a time when the sampling operation is performed, the eye

pattern tends to deform. In particular, if a transmission line is in a poor condition, the tendency for the eye pattern to deform is exacerbated.

In contrast, in the present case, using a pilot symbol, an optimum point for carrying out the sampling operation is precisely determined for example by selecting the maximum sampling point. This is possible because the pilot symbol has a certain value. A characteristic of this feature of the sampling point being selected at the middle point between the pilot symbols is that the eye pattern is at a maximum. The eye pattern results from discreetly oversampling the reception signal. In other words, in a signal frame including data symbols, each data symbol is sandwiched between pilot symbols as clearly shown in Figure 2 of the present application. Thus, it is possible to optimize and updating timing of a reception sampling point which is subject to oversampling. The present specification discloses an interpolation synchronous detection method which optimizes the updated timing of the reception sampling point of each data symbol. Accordingly, a transmission phase error is minimized by discreetly changing the transfer functions in the transmitting and reception sections of the radio communication system at the middle point between pilot symbols sandwiching the data symbol. The transmission error is caused by the fact that an oversampling point with respect to pilot symbol sandwiching the data symbol is different. These features are neither disclosed nor suggested by any of the references.

It should be noted that the Chalmers reference merely discloses that in individual data symbols, it is possible to adopt a point that optimizes the eye pattern of each data symbol as a sampling point. However, at no point does Chalmers

discuss the minimization of phase error by discreetly changing the transfer functions in the transmitting and reception sections of the radio communication system by ensuring that the oversampling point coincides with the maximum eye pattern as explicitly recited in Applicant's claim. As such, Applicant's claims are allowable over the cited references.

Applicant has responded to all of the rejections and objections recited in the Office Action. Reconsideration and a Notice of Allowance for all of the pending claims are therefore respectfully requested.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

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If the Examiner believes an interview would be of assistance, the Examiner is welcome to contact the undersigned at the number listed below.

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Respectfully submitted,

By 

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